This project has received funding from the Electronic Components and Systems for European Leadership Joint
Undertaking under grant agreement No 876925

ECSEL Joint Undertaking
Electronic Components and Systems for European Leadership

ANDANTE

AI for New Devices And Technologies at the Edge

D1.4 Memory, ICs, boards and tools requirements

Deliverable No.	D1.4	**Due Date**	31-*May*-2021
Type	Report	**Dissemination Level**	*Confidential*
Version	1.0	**Status**	Final
Description	The deliverable aims to collect the system requirements of every Use case regarding memory, ICs, boards and tools requirements .		
Work Package	WP1 – Use case system Architectures description and application Requirements		

Abstract (Published Summary)

This document (D1.4 **"Memory, ICs, boards and tools requirements")** is the outcome of Task 1.2 "**System requirements**", it is derived from D1.1 "**Use case description at system level and capture of their requirements"** and captures the system requirements and system architecture for each of the 13 use cases, resulting not only from the work done at WP1 but also from the contributions provided by WP4 and WP5.This document will be used as the basis for the design, implementation, and validation of the system demonstrators in charge to evaluate the neuromorphic solutions for Edge applications developed in ANDANTE.

The ANDANTE project is constituted of thirteen use cases that should demonstrate and highlight the benefits of the neuromorphic solutions developed during the project. Within the work presented in D1.1, each use case was described, not only from a technical perspective, but also specifying the target performance and the added value that these innovations provide to their specific market areas.

T1.2 is intended to provide a high-level description of the systems that will provide a solution for the presented use cases. These solutions are embedded systems at the Edge based on state-of-the-art Neuromorphic technology. This document also pays special attention to the hardware architectures to capture the relevant information that WP2, WP3 and WP4 require to develop the different hardware platforms on which these systems are based

This document is also the cooperation results with WP2, WP3, WP4 and WP5 to progress in the requirements for the implementation of the use cases in five applications domains. With this cooperation, the requirements elicitation becomes the definition point of connection between the different work packages, ensuring that all the work done along the project is aligned with the project's objectives and more specifically in line with the use cases goals.

The information provided in this report is organized in different tables (use case board/platform and host requirements, use case requirements, and the requirements of neuromorphic ASICs or FPGA accelerators). according to the nature of the hardware parts required by the partners' needs to implement their use cases in line with its associated application domain. The cooperation work between the partners of different WPs has been essential to set the basis to reach the next ANDANTE milestones.

This document captures the system requirements of the 13 uses cases as a complete entity, defining functional and non-functional requirements, inputs/outputs, and SW tools required. It also provides the descriptions of the different use cases system architectures. All the information contained in this deliverable is the starting point for the development of eNVM memories technologies and their selection in the design and implementation of the different building blocks, ASICs, FPGAs, boards, platforms, and the use cases applications to be developed based in the activities performed in the WP2 to WP5.

The alignment between technology providers, hardware designers and manufacturers, and application developers of the boards/platforms has been a key step in the roadmap to create neuromorphic platforms matching system requirements of the 13 use cases defined in ANDANTE.